ASSESSMENT OF CARDIO-RESPIRATORY FITNESS (CRF) WITHOUT EXERCISE TESTING AND ASSOCIATION OF CRF WITH WAIST CIRCUMFERENCE (WC) IN YOUNG ADULTS

Bianco Antonino, Bellafiore Marianna, Mammina Caterina, Battaglia Giuseppe, Palumbo Daniele, Farina Felicia, Palma Antonio
(University of Palermo, Italy)

Cardiorespiratory fitness (CRF) is a strong health risk indicator in otherwise asymptomatic individuals, but its evaluation is not usually performed because of absence of feasible methods of measurement and consensus guidelines for interpretation.

The aim of the study was to assess feasibility of routinely assessing (CRF) by a non-exercise based method, that has been recently proposed by Jurca R et al. (2005). 197 healthy subjects (mean age 23.3, s.d. 12.0 years), of whom 86 women and 111 men, regularly (>4d/wk) engaging in physical activities, were enrolled. BMI and WC were measured by standard procedures. BMI values were collapsed in two classes, normal and overweight, respectively. CRF levels were estimated by applying the non-exercise test method cited above. Accordingly, subjects were categorized into three CRF levels: 11/13 METS = good; 14/18 METs = very good; > 18 METs = excellent.

Mean BMI of participants was 21.6, s.d. 2.8 for women and 23.7, s.d. 2.9 for men (P<0.001). 89.4% of women and 74.5% of men were included in the normal weight class, whereas 10.6% of women and 25.5% of men in the overweight class. Mean WC was 80.6, s.d. 8.7 for women and 85.4, s.d. 9.9 for men (P< 0.001). 71.4% and 28.6%, respectively, of 84 women were classified into the very good and excellent MET classes. 87.7%, 7.5% and 4.7% of men were included, respectively, into the very good, good and excellent levels. There was a statistically significant negative association (P=0.002) between CRF level and WC values in the normal weight group of men. The low prevalence of overweight male subjects did not allow for a reliable statistical assessment. No significant association was found among the female individuals.

Preliminary results indicate that CRF may be easily assessed by a non-exercise test method on a large number of subjects. Means of WC were significantly lower across increasing CRF levels in men of normal BMI, while a similar negative association was not evident within women. Additional work is needed to overcome the limits of this study, by involving more subjects and physically inactive individuals.

Our observations suggest that in normal-weight male young adults, CRF is inversely associated with lower visceral and abdominal adiposity.

REFERENCES

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